

## ABSTRACT

A method of preparing non-platinum composite electrocatalyst for a fuel cell cathode, comprising: (1) preparing a carbon supporting titanium dioxide; (2) compounding the carbon supporting titanium dioxide with a transition metal macrocyclic compound in an organic solvent to produce a carbon supporting titanium dioxide - transition metal macrocyclic compound comprising 0.1-5 g/L of macrocyclic compound; and (3) thermal treating the resulting compound in step (2) at 100-1000°C to produce a composite catalyst. The composite catalyst prepared with the method according to the present invention also has the advantages of better resistance to methanol and lower cost over the Pt/C catalyst. The said composite catalyst would have better prospects in application.